

The Afghanistan Engineering Support Program assembled this deliverable. It is an approved, official USAID document. Budget information contained herein is for illustrative purposes. All policy, personal, financial, and procurement sensitive information has been removed. Additional information on the report can be obtained from Firouz Rooyani, Tetra Tech Sr. VP International Operations, (703) 387-2151.



TETRA TECH

May 31, 2010

[REDACTED]  
USAID – Office of Infrastructure, Engineering and Energy (OIEE)  
Café Compound  
U.S. Embassy  
Great Masood Road Kabul, Afghanistan

RE: WO-A-0033 MoPH Complex Structural Design Review

Dear Sirs,

Per your recent request, attached is the review of the Ministry of Public Health Complex drawings dated 19 March 2010.

Please contact us if you have any questions or comments regarding this review.

Sincerely,

[REDACTED]  
Deputy Chief of Party (OIEE-AESP)  
Tetra Tech EM Inc.

Cc: [REDACTED] Deputy Division Chief, Water and Energy (OIEE)  
[REDACTED] (USAID-OIEE)

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WO-A-0033

Structural Review Comments - Schematic Design Submittal

Ministry of Public Health - Headquarters Campus

Kabul, Afghanistan

**URS PROJECT NO: 31943406**

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Structural DINING FAC Bldg 7	16-19
Structural GUARD HOUSE Bldg 8	20-23
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Submittal Date: 10-Mar-10

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Comment No.	Reviewer	Dwg Reference	Comment	Response Code	Response	Back-Check
<b>STRUCTURAL COMMENTS - EXECUTIVE OFFICE BUILDING - BUILDING NO. 1</b>						
S1-1	FRS	1 S-001 Abbreviations	AISC "Construction" not "Contractors"			
S1-2	FRS	1 S-001 Abbreviations	Add CB Concrete Beam & CS Concrete Slab			
S1-3	FRS	1 S-001 Abbreviations	Add "IJ" Isolation Joint			
S1-4	FRS	1 S-001 General Notes	Consider indicating the year/or edition of ACI, AISC, AWS to clarify the indicated referenced design criteria.			
S1-5	FRS	1 S-001 Design Loads	Wind load basic wind speed of 40 m/s indicated; UFC 3 301 01 (27Jan2010) lists 125 km/h (=34.7 m/s). What is source of 40 m/s value?			
S1-6	FRS	1 S-001 Design Loads	Seismic coefficients indicated as $S_s=1.13g$ ; $S_1=0.53g$ ; $S_d=0.78g$ & $S_d1=0.53g$ - What was your source for $S_s/S_1$ ? Compared to UFC 3-310-01 (27Jan2010) lists $S_s=1.28g$ & $S_1=0.51g$ - (results in $S_d=0.83$ & $S_d1=0.51$ ) is comparable to your calculated values.			
S1-7	FRS	1 S-001 Design Loads	Sloping Steel Roof Structure - Steel System not Specifically detailed for Seismic Resistance, Not Permitted for SDC D withn ASCE 7-05. Would it be appropriate to assign Special steel concentrically braced frames ( $R=6$ , etc.) for the truss roof?			
S1-8	FRS	1 S-001 Foundations	Suggest including note to indicate "Do not place foundation concrete when water is present in excavation."			
S1-9	FRS	1 S-001 CIP Concrete	Why not specify $f'_c = 27.5$ Mpa (4000psi)? Easily achievable and has potential to reduce dead load and overall cost.			
S1-10	FRS	1 S-001 CIP Concrete	Suggest stating Average air entrainment of 5% recommended by ACI for freeze thaw resistance in moderate exposures - This seems appropriate for Kabul.			
S1-11	FRS	1 S-001 CIP Concrete	Per ACI 211.1-91 - w/c of 0.48 would be in line with a 27.5MPa (4000psi) air entrained mix using 19mm coarse aggregate producing about 75 to 100mm slump.			
S1-12	FRS	1 S-001 CIP Concrete	Indicate that potable water shall be used as concrete mix water to reduce the amount of undesirable components (chlorides, etc.).			
S1-13	FRS	1 S-002 CIP Concrete	Note 17 - include at last sentence ", except at expansion joints."			
S1-14	FRS	1 S-002 CIP Concrete	Note 20 - "Provide"			
S1-15	FRS	1 S-002 CIP Concrete	Table #2 - Should Title read "Minimum Tension Lap Splice..." ?			

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<b>STRUCTURAL COMMENTS - EXECUTIVE OFFICE BUILDING - BUILDING NO. 1</b>						
S1-16	FRS	1 S-002 CIP Concrete	Table #2 - Say minimum clearances no less than 25mm to accommodate placement of conc mix with 20mm coarse aggregate. Per ACI 318M-05 7.5.2.1 allows (-)10mm clear cover for slabs < 200mm thick and (-)13mm clear cover for >200mm thick. This reviewer would feel more comfortable with minimum clear cover of at least 25mm, even better with 40mm.			
S1-17	FRS	1 S-002 CIP Concrete	Table #2 - cast against earth should be "75mm"			
S1-18	FRS	1 S-002 CIP Concrete	Table #2 - suggest including "Pipes & Other Embedments....50mm"			
S1-19	FRS	6 S-002 Masonry	Note 9 - Indicate masonry to be placed in a running bond pattern.			
S1-20	FRS	1 S-002 Struct Steel	Note 7 - Consider that a substantial hot-dipped galvanizing facility may not be readily available and may distort bid cost for str steel fabrication because there may be increased shipping costs driving the bid item. Consider a Painting note such as "Shop prime all steel not encased in concrete or not required to have spray-applied fireproofing. Provide finish coatings as recommended by coating manufacturer."			
S1-21	FRS	1 S-002 Corr Metal Deck	Include Note 3 - Deck Fastening Requirements.			
S1-22	FRS	1 S-101	Note 1 - suggest FF datum EI 10.000 to eliminate "negative" subgrade elevations that may be confusing to field, especially if working on small format drawings.			
S1-23	FRS	1 S-101	Show all masonry wall locations.			
S1-24	FRS	1 S-101	Call out Entry and Courtyard on plan view.			
S1-25	FRS	1 S-101	Show any slab recess areas with section mark reference to Detail 4 S-501. Show thickened slab locations and reference with section 5 to S-501.			
S1-26	FRS	1 S-101	Show slab joint locations by type or a note that Final Design Engineer provide joint locations.			
S1-27	FRS	1 S-101	Indicate slab-on-grade bars connecting into structural slab - assumed this is a design condition (as mentioned in DA) for the complete or partially complete basic structure as required.			
S1-28	FRS	1 S-102	Change abbreviation "C" to "CS" for Concrete Slab			
S1-29	FRS	1 S-102	Note 9 - add to last sentence, "...for self weight and seismic loading."			
S1-30	FRS	1 S-102	Note 1 - add 10.0m to elevation per comment S16 above.			

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<b>STRUCTURAL COMMENTS - EXECUTIVE OFFICE BUILDING - BUILDING NO. 1</b>						
S1-31	FRS	1 S-102	Add section marks referring to S-511			
S1-32	FRS	1 S-103	Change abbreviation "C" to "CS" for Concrete Slab			
S1-33	FRS	1 S-103	Note 1 - add 10.0m to elevation per comment S22 above.			
S1-34	FRS	1 S-501	Detail 2 - revise callout to "Formed or tooled joint"			
S1-35	FRS	1 S-501	Detail 3 - Why cut any reinforcement if T/4 valley initiates weak plane shrink crack and rebar keeps the joint tight? - Also rebar is to be set lower than T/4 at T/3.			
S1-36	FRS	1 S-501	Detail 4 - consider moving 90 hook to clear edge of recess and enclose #14 bar.			
S1-37	FRS	1 S-501	Detail 5 - Provide bent bars across bottom of thickened slab perimeter to provide rebar in tension zone of thickened slab - lap to slab rebar.			
S1-38	FRS	1 S-501	Detail 6 - Show transverse bars.			
S1-39	FRS	1 S-501	Detail 7 - suggest calling detail "additional corner reinforcing" and pointing to both corner bars - or show vertical reinforcing in this detail.			
S1-40	FRS	1 S-501	Detail 8 - stop hooked dowels at lap point in wall above slab. Call out "typ" in column bubble. Change word "bond breaker" to "joint filler". Why is infill section deeper than slab - should it have a bond breaker at concrete column?			
S1-41	FRS	1 S-501	Detail 9 - fix slab dimension to 150mm. Why not use 12mm premoulded filler instead of 6mm - is 6mm enough? Fix clear cover leader line to bottom of footing bars.			
S1-42	FRS	1 S-501	Detail 10 - Call out "12mm thk premoulded joint filler". Slab rebar shows 90 deg hook at end, seems there will not be adequate depth - can rebar be terminated without a hook?			
S1-43	FRS	1 S-511	Detail 4 - If intent is to splice slab bottom rebar, is 150mm minimum correct, seems 200mm is minimum for straight compression bar development?			
S1-44	FRS	1 S-512	Are there more than one Typical stirrup types? Are cross-ties required over a particular beam width?			
S1-45	FRS	1 S-513	Consider a Note 4 - "Cast-In-Place reinforced bond beams may be used instead of lintel block units."			
S1-46	FRS	1 S-513	Detail 2 - Is there additional horizontal reinforcement required at wall intersections and corners? General Masonry Note 20 indicates anchors, suggest a cross reference.			
S1-47	FRS	1 S-513	Detail 3 - Consider Option to provide dry-pack grout alternative to premoulded filler in case wall is constructed after upper slab. With consideration to any required firestopping detail.			

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<b>STRUCTURAL COMMENTS - EXECUTIVE OFFICE BUILDING - BUILDING NO. 1</b>						
S1-48	FRS	1 S-513	Detail 3 - Instead of headed studs welded to embedded side of top connection plate, consider using threaded anchors with end nut "head" in slab and holes in top plate to pass rods down through bolted hole connection in L125x75 (ea side) to eliminate these field welds.			
S1-49	FRS	1 S-521	Detail 1 - correct spelling "slopped".			
S1-50	FRS	1 S-521	Consider showing bolted connections instead of field weld or suggest providing a note that indicates "Field bolted connections may be used in lieu of field welded connections."			
P1-1	FRS	1 P-101	Correct spelling for "entery".			
E1-1	FRS	1 E-502	Fill in data for Lighting Fixture Schedule.			

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<b>STRUCTURAL COMMENTS - OFFICE BUILDINGS - BUILDINGS NO. 2, 3 &amp; 4</b>						
S234-1	FRS	234 S-001 Abbreviations	AISC "Construction" not "Contractors"			
S234-2	FRS	234 S-001 Abbreviations	Add CB Concrete Beam & CS Concrete Slab			
S234-3	FRS	234 S-001 Abbreviations	Add "IJ" Isolation Joint			
S234-4	FRS	234 S-001 General Notes	Consider indicating the year/or edition of ACI, AISC, AWS to clarify the indicated referenced design criteria.			
S234-5	FRS	234 S-001 Design Loads	Wind load basic wind speed of 40 m/s indicated; UFC 3 301 01 (27Jan2010) lists 125 km/h (=34.7 m/s). What is source of 40 m/s value?			
S234-6	FRS	234 S-001 Design Loads	Seismic coefficients indicated as $S_s=1.13g$ ; $S_1=0.53g$ ; $S_d=0.78g$ & $S_d1=0.53g$ - What was your source for $S_s/S_1$ ? Compared to UFC 3-310-01 (27Jan2010) lists $S_s=1.28g$ & $S_1=0.51g$ - (results in $S_d=0.83$ & $S_d1=0.51$ ) is comparable to your calculated values.			
S234-7	FRS	234 S-001 Design Loads	Sloping Steel Roof Structure - Steel System not Specifically detailed for Seismic Resistance, Not Permitted for SDC D withn ASCE 7-05. Would it be appropriate to assign Special steel concentrically braced frames ( $R=6$ , etc.) for the truss roof?			
S234-8	FRS	234 S-001 Foundations	Suggest including note to indicate "Do not place foundation concrete when water is present in excavation."			
S234-9	FRS	234 S-002 CIP Concrete	Why not specify $f'_c = 27.5$ Mpa (4000psi)? Easily acheivable and has potential to reduce dead load and overall cost.			
S234-10	FRS	234 S-002 CIP Concrete	Suggest stating Average air entrainment of 5% recommended by ACI for freeze thaw resistance in moderate exposures - This seems appropriate for Kabul.			
S234-11	FRS	234 S-002 CIP Concrete	Per ACI 211.1-91 - w/c of 0.48 would be in line with a 27.5MPa (4000psi) air entrained mix using 19mm coarse aggregate producing about 75 to 100mm slump.			
S234-12	FRS	234 S-002 CIP Concrete	Indicate that potable water shall be used as concrete mix water to reduce the amount of undesirable components (chlorides, etc.).			
S234-13	FRS	234 S-002 CIP Concrete	Note 17 - include at last sentence ", except at expansion joints."			
S234-14	FRS	234 S-002 CIP Concrete	Note 20 - "Provide"			

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<b>STRUCTURAL COMMENTS - OFFICE BUILDINGS - BUILDINGS NO. 2, 3 &amp; 4</b>						
S234-15	FRS	234 S-002 CIP Concrete	Table #2 - Say minimum clearances no less than 25mm to accommodate placement of conc mix with 20mm course aggregate. A 40mm minimum clearance is recommended to enable practical bar placement tolerance limits.			
S234-16	FRS	234 S-002 CIP Concrete	Table #2 - cast against earth should be "75mm"			
S234-17	FRS	234 S-002 CIP Concrete	Table #2 - suggest including "Pipes & Other Embedments....50mm"			
S234-18	FRS	234 S-002 Masonry	Note 9 - Indicate masonry to be placed in a running bond pattern.			
S234-19	FRS	234 S-002 Struct Steel	New Note - Consider a Painting note such as "Shop prime all steel not encased in concrete or not required to have spray-applied fireproofing. Provide finish coatings as recommended by coating manufacturer."			
S234-20	FRS	234 S-002 Corr Metal Deck	Include Note 3 - Deck Fastening Requirements.			
S234-21	FRS	234 S-101	Note 1 - suggest FF datum EI 10.000 to eliminate "negative" subgrade elevations that may be confusing to field, especially if working on small format drawings.			
S234-22	FRS	234 S-101	Show all masonry wall locations.			
S234-23	FRS	234 S-101	Call out Entry and Courtyard on plan view.			
S234-24	FRS	234 S-101	Show any slab recess areas with section mark reference to Detail 4 S-501. Show any thickened slab locations and reference with section 5 to S-501.			
S234-25	FRS	234 S-101	Show slab joint locations by type or a note that Final Design Engineer provide joint locations.			
S234-26	FRS	234 S-101	Indicate slab-on-grade bars connecting into structural slab - assumed this is a design condition (as mentioned in DA) for the complete or partially complete basic structure as required.			
S234-27	FRS	234 S-102	Plan title - change to "S-102"			
S234-28	FRS	234 S-102	Change abbreviation "C" to "CS" for Concrete Slab			
S234-29	FRS	234 S-102	Indicate stairwell numbers.			
S234-30	FRS	234 S-102	Note 9 - add to last sentence, "...for self weight and seismic loading."			
S234-31	FRS	234 S-103	Change abbreviation "C" to "CS" for Concrete Slab			
S234-32	FRS	234 S-111	Callout exterior pier. Datum EI 0.0 for FF would result in negative elevations for foundation details.			
S234-33	FRS	234 S-113	Change abbreviation "C" to "CS" for Concrete Slab			
S234-34	FRS	234 S-113	Show piers (hidden line) Col Line F			
S234-35	FRS	234 S-113	Typ Truss Elevation - reference sheet to S-114.			

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<b>STRUCTURAL COMMENTS - OFFICE BUILDINGS - BUILDINGS NO. 2, 3 &amp; 4</b>						
S234-36	FRS	234 S-501	Detail 3 - Why cut any reinforcement if T/4 valley initiates weak plane shrink crack and rebar keeps the joint tight? - Also rebar is to be set lower than T/4 at T/3.			
S234-37	FRS	234 S-501	Detail 4 - consider moving 90 hook to clear edge of recess and enclose #14 bar.			
S234-38	FRS	234 S-501	Detail 5 - Provide bent bars across bottom of thickened slab perimeter to provide rebar in tension zone of thickened slab - lap to slab rebar.			
S234-39	FRS	234 S-501	Detail 6 - Show transverse bars.			
S234-40	FRS	234 S-501	Detail 7 - suggest calling detail "additional corner reinforcing" and pointing to both corner bars - or show vertical reinforcing in this detail.			
S234-41	FRS	234 S-501	Detail 8 - stop hooked dowels at lap point in wall above slab. Call out "typ" in column bubble. Change word "bond breaker" to "joint filler". Why is infill section deeper than slab - should it have a bond breaker at concrete column?			
S234-42	FRS	234 S-501	Detail 9 - fix slab dimension to 150mm. Why not use 12mm premoulded filler instead of 6mm - is 6mm enough? Fix clear cover leader line to bottom of footing bars.			
S234-43	FRS	234 S-501	Detail 10 - Call out "12mm thk premoulded joint filler". Slab rebar shows 90 deg hook at end, seems there will not be adequate depth - can rebar be terminated without a hook?			
S234-44	FRS	234 S-511	Detail 4 - If intent is to splice slab bottom rebar, is 150mm minimum correct, seems 200mm is minimum for straight compression bar development?			
S234-45	FRS	234 S-512	Are there more than one Typical stirrup types? Are cross-ties required over a particular beam width?			
S234-46	FRS	234 S-513	Consider a Note 4 - "Cast-In-Place reinforced bond beams may be used instead of lintel block units."			
S234-47	FRS	234 S-513	Detail 2 - Is there additional horizontal reinforcement required at wall intersections and corners? General Masonry Note 20 indicates anchors, suggest a cross reference.			
S234-48	FRS	234 S-513	Detail 3 - Consider Option to provide dry-pack grout alternative to premoulded filler in case wall is constructed after upper slab. With consideration to any required firestopping detail.			
S234-49	FRS	234 S-513	Detail 3 - Instead of headed studs welded to embedded side of top connection plate, consider using threaded anchors with end nut "head" in slab and holes in top plate to pass rods down through bolted hole connection in L125x75 (ea side) to eliminate these field welds.			

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STRUCTURAL COMMENTS - OFFICE BUILDINGS - BUILDINGS NO. 2, 3 & 4						
S234-50	FRS	234 S-521	Detail 1 - correct spelling "slopped".			
E234-1	FRS	234 E-503	Fill in data for Lighting Fixture Schedule.			

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<b>STRUCTURAL COMMENTS - MULTI PURPOSE BUILDING NO. 5</b>						
S5-1	FRS	5 S-001 Abbreviations	AISC "Construction" not "Contractors"			
S5-2	FRS	5 S-001 Abbreviations	Add CB Concrete Beam & CS Concrete Slab			
S5-3	FRS	5 S-001 Abbreviations	Add "IJ" Isolation Joint			
S5-4	FRS	5 S-001 General Notes	Consider indicating the year/or edition of ACI, AISC, AWS to clarify the indicated referenced design criteria.			
S5-5	FRS	5 S-001 Design Loads	Wind load basic wind speed of 40 m/s indicated; UFC 3 301 01 (27Jan2010) lists 125 km/h (=34.7 m/s). What is source of 40 m/s value?			
S5-6	FRS	5 S-001 Design Loads	Seismic coefficients indicated as $S_s=1.13g$ ; $S_1=0.53g$ ; $S_d=0.78g$ & $S_d=0.53g$ - What was your source for $S_s/S_1$ ? Compared to UFC 3-310-01 (27Jan2010) lists $S_s=1.28g$ & $S_1=0.51g$ - (results in $S_d=0.83$ & $S_d=0.51$ ) is comparable to your calculated values.			
S5-7	FRS	5 S-001 Design Loads	Sloping Steel Roof Structure - Steel System not Specifically detailed for Seismic Resistance, Not Permitted for SDC D withn ASCE 7-05. Would it be appropriate to assign Special steel concentrically braced frames ( $R=6$ , etc.) for the truss roof?			
S5-8	FRS	5 S-001 Foundations	Suggest including note to indicate "Do not place foundation concrete when water is present in excavation."			
S5-9	FRS	5 S-001 CIP Concrete	Why not specify $f'_c = 27.5$ Mpa (4000psi)? Easily acheivable and has potential to reduce dead load and overall cost.			
S5-10	FRS	5 S-001 CIP Concrete	Suggest stating Average air entrainment of 5% recommended by ACI for freeze thaw resistance in moderate exposures - This seems appropriate for Kabul.			
S5-11	FRS	5 S-001 CIP Concrete	Per ACI 211.1-91 - w/c of 0.48 would be in line with a 27.5MPa (4000psi) air entrained mix using 19mm coarse aggregate producing about 75 to 100mm slump.			
S5-12	FRS	5 S-001 CIP Concrete	Indicate that potable water shall be used as concrete mix water to reduce the amount of undesirable components (chlorides, etc.).			
S5-13	FRS	5 S-002 CIP Concrete	Note 17 - include at last sentence ", except at expansion joints."			
S5-14	FRS	5 S-002 CIP Concrete	Note 20 - "Provide"			

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<b>STRUCTURAL COMMENTS - MULTI PURPOSE BUILDING NO. 5</b>						
S5-15	FRS	5 S-002 CIP Concrete	Table #2 - Should Title read "Minimum Tension Lap Splice..." ?			
S5-16	FRS	5 S-002 CIP Concrete	Table #2 - Say minimum clearances no less than 25mm to accommodate placement of conc mix with 20mm coarse aggregate. Per ACI 318M-05 7.5.2.1 allows (-)10mm clear cover for slabs < 200mm thick and (-)13mm clear cover for >200mm thick. This reviewer would feel more comfortable with minimum clear cover of at least 25mm, even better with 40mm.			
S5-17	FRS	5 S-002 CIP Concrete	Table #2 - cast against earth should be "75mm"			
S5-18	FRS	5 S-002 CIP Concrete	Table #2 - suggest including "Pipes & Other Embedments....50mm"			
S5-19	FRS	5 S-002 Masonry	Note 9 - Indicate masonry to be placed in a running bond pattern.			
S5-20	FRS	5 S-002 Struct Steel	Note 7 - Consider that a substantial hot-dipped galvanizing facility may not be readily available and may distort bid cost for str steel fabrication because there may be increased shipping costs driving the bid item. Consider a Painting note such as "Shop prime all steel not encased in concrete or not required to have spray-applied fireproofing. Provide finish coatings as recommended by coating manufacturer."			
S5-21	FRS	5 S-002 Corr Metal Deck	Include Note 3 - Deck Fastening Requirements.			
S5-22	FRS	5 S-101	Note 1 - suggest FF datum El 10.000 to eliminate "negative" subgrade elevations that may be confusing to field, especially if working on small format drawings.			
S5-23	FRS	5 S-101	Show all masonry wall locations.			
S5-24	FRS	5 S-101	Show any slab recess areas with section mark reference to Detail 4 S-501. Show thickened slab locations and reference with section 5 to S-501.			
S5-25	FRS	5 S-101	Show slab joint locations by type or a note that Final Design Engineer provide joint locations.			
S5-26	FRS	5 S-101	DA mentions the individual structures are "separated" with separation joint. If so what load demand requires 5B thru 5F be a strip footing instead of individual strip footings like Line 1 - Corridor Area roof load?			
S5-27	FRS	5 S-102	Change abbreviation "C" to "CS" for Concrete Slab			
S5-28	FRS	5 S-103	Show concrete pier lines A5 & G5.			

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Comment No.	Reviewer	Dwg Reference	Comment	Response Code	Response	Back-Check
<b>STRUCTURAL COMMENTS - MULTI PURPOSE BUILDING NO. 5</b>						
S5-29	FRS	5 S-103	Should horizontal bracing be shown within the plane of Upper roof plan?			
S5-30	FRS	5 S-501	Detail 3 - Why cut any reinforcement if T/4 valley initiates weak plane shrink crack and rebar keeps the joint tight? - Also rebar is to be set lower than T/4 at T/3.			
S5-31	FRS	5 S-501	Detail 4 - consider moving 90 hook to clear edge of recess and enclose #14 bar.			
S5-32	FRS	5 S-501	Detail 5 - Provide bent bars across bottom of thickened slab perimeter to provide rebar in tension zone of thickened slab - lap to slab rebar.			
S5-33	FRS	5 S-501	Detail 6 - Show transverse bars.			
S5-34	FRS	5 S-501	Detail 7 - suggest calling detail "additional corner reinforcing" and pointing to both corner bars - or show vertical reinforcing in this detail.			
S5-35	FRS	5 S-501	Detail 8 - stop hooked dowels at lap point in wall above slab. Call out "typ" in column bubble. Change word "bond breaker" to "joint filler". Why is infill section deeper than slab - should it have a bond breaker at concrete column?			
S5-36	FRS	5 S-501	Detail 9 - fix slab dimension to 150mm. Why not use 12mm premoulded filler instead of 6mm - is 6mm enough? Fix clear cover leader line to bottom of footing bars.			
S5-37	FRS	5 S-501	Detail 10 - Call out "12mm thk premoulded joint filler". Slab rebar shows 90 deg hook at end, seems ther will not be adequate depth - can rebar terminated without a hook?			
S5-38	FRS	5 S-501	Detail 4 - Is a sill block necessary?			
S5-39	FRS	5 S-501	Detail 3 - Does the 16mm vertical wall dowel need a 90deg hook to develop into the slab?			
S5-40	FRS	5 S-501	Detail 3 - Show exterior pave ment sloping away from joint at building.			
S5-41	FRS	5 S-511	Detail 4 - If intent is to splice slab bottom rebar, is 150mm minimum correct, seems 200mm is minimum for straight compression bar development?			
S5-42	FRS	5 S-512	Are there more than one Typical stirrup types? Are cross-ties required over a particular beam width?			
S5-43	FRS	5 S-513	Detail 2 - Is there additional horizontal reinforcement required at wall intersections and corners? General Masonry Note 20 indicates anchors, suggest a cross reference.			

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Ministry of Public Health - Headquarters Campus

Kabul, Afghanistan

URS PROJECT NO: 31943406

Submittal Date: 10-Mar-10

Review Date: 19-May-10

Reviewed By:



Comment No.	Reviewer	Dwg Reference	Comment	Response Code	Response	Back-Check
<b>STRUCTURAL COMMENTS - MULTI PURPOSE BUILDING NO. 5</b>						
S5-44	FRS	5 S-513	Detail 3 - Consider Option to provide dry-pack grout alternative to premoulded filler in case wall is constructed after upper slab. With consideration to any required firestopping detail.			
S5-45	FRS	5 S-513	Detail 3 - Instead of headed studs welded to embedded side of top connection plate, consider using threaded anchors with end nut "head" in slab and holes in top plate to pass rods down through bolted hole connection in L125x75 (ea side) to eliminate these field welds.			
S5-46	FRS	5 S-514	Detail 1 - Note 1 fill in reference to general note sheet.			
S5-47	FRS	5 S-521	Detail 1 - correct spelling "slopped".			
S5-48	FRS	5 S-521	Consider showing bolted connections instead of field weld or suggest providing a note that indicates "Field bolted connections may be used in lieu of field welded connections."			
E5-1	FRS	5 E-502	Fill in data for Lighting Fixture Schedule.			

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Comment No.	Reviewer	Dwg Reference	Comment	Response Code	Response	Back-Check
<b>STRUCTURAL COMMENTS - GUEST HOUSE - BUILDING NO. 6</b>						
S6-1	FRS	6 S-001 Abbreviations	AISC "Construction" not "Contractors"			
S6-2	FRS	6 S-001 Abbreviations	Add CB Concrete Beam & CS Concrete Slab			
S6-3	FRS	6 S-001 Abbreviations	Add "IJ" Isolation Joint			
S6-4	FRS	6 S-001 General Notes	Consider indicating the year/or edition of ACI, AISC, AWS to clarify the indicated referenced design criteria.			
S6-5	FRS	6 S-001 Design Loads	Wind load basic wind speed of 40 m/s indicated; UFC 3 301 01 (27Jan2010) lists 125 km/h (=34.7 m/s). What is source of 40 m/s value?			
S6-6	FRS	6 S-001 Design Loads	Seismic coefficients indicated as $S_s=1.13g$ ; $S_1=0.53g$ ; $S_d=0.78g$ & $S_d1=0.53g$ - What was your source for $S_s/S_1$ ? Compared to UFC 3-310-01 (27Jan2010) lists $S_s=1.28g$ & $S_1=0.51g$ - (results in $S_d=0.83$ & $S_d1=0.51$ ) is comparable to your calculated values.			
S6-7	FRS	6 S-001 Design Loads	Sloping Steel Roof Structure - Steel System not Specifically detailed for Seismic Resistance, Not Permitted for SDC D withn ASCE 7-05. Would it be appropriate to assign Special steel concentrically braced frames ( $R=6$ , etc.) for the truss roof?			
S6-8	FRS	6 S-001 Foundations	Suggest including note to indicate "Do not place foundation concrete when water is present in excavation."			
S6-9	FRS	6 S-001 CIP Concrete	Why not specify $f'_c = 27.5$ Mpa (4000psi)? Easily acheivable and has potential to reduce dead load and overall cost.			
S6-10	FRS	6 S-001 CIP Concrete	Suggest stating Average air entrainment of 5% recommended by ACI for freeze thaw resistance in moderate exposures - This seems appropriate for Kabul.			
S6-11	FRS	6 S-001 CIP Concrete	Per ACI 211.1-91 - w/c of 0.48 would be in line with a 27.5MPa (4000psi) air entrained mix using 19mm coarse aggregate producing about 75 to 100mm slump.			
S6-12	FRS	6 S-001 CIP Concrete	Indicate that potable water shall be used as concrete mix water to reduce the amount of undesirable components (chlorides, etc.).			
S6-13	FRS	6 S-002 CIP Concrete	Note 17 - include at last sentence ", except at expansion joints."			

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<b>STRUCTURAL COMMENTS - GUEST HOUSE - BUILDING NO. 6</b>						
S6-14	FRS	6 S-002 CIP Concrete	Note 20 - "Provide"			
S6-15	FRS	6 S-002 CIP Concrete	Table #2 - Should Title read "Minimum Tension Lap Splice..." ?			
S6-16	FRS	6 S-002 CIP Concrete	Table #2 - Say minimum clearances no less than 25mm to accommodate placement of conc mix with 20mm coarse aggregate. Per ACI 318M-05 7.5.2.1 allows (-)10mm clear cover for slabs < 200mm thick and (-)13mm clear cover for >200mm thick. This reviewer would feel more comfortable with minimum clear cover of at least 25mm, even better with 40mm.			
S6-17	FRS	6 S-002 CIP Concrete	Table #2 - cast against earth should be "75mm"			
S6-18	FRS	6 S-002 CIP Concrete	Table #2 - suggest including "Pipes & Other Embedments....50mm"			
S6-19	FRS	6 S-002 Masonry	Note 9 - Indicate masonry to be placed in a running bond pattern.			
S6-20	FRS	1 S-002 Struct Steel	Note 7 - Consider that a substantial hot-dipped galvanizing facility may not be readily available and may distort bid cost for str steel fabrication because there may be increased shipping costs driving the bid item. Consider a Painting note such as "Shop prime all steel not encased in concrete or not required to have spray-applied fireproofing. Provide finish coatings as recommended by coating manufacturer."			
S6-21	FRS	1 S-002 Corr Metal Deck	Include Note 3 - Deck Fastening Requirements.			
S6-22	FRS	6 S-101	Note 1 - suggest FF datum El 10.000 to eliminate "negative" subgrade elevations that may be confusing to field, especially if working on small format drawings.			
S6-23	FRS	6 S-101	Show any slab recess areas with section mark reference to Detail 4 S-501. Show thickened slab locations and reference with section 5 to S-501.			
S6-24	FRS	6 S-101	Show slab joint locations by type or a note that Final Design Engineer provide joint locations.			
S6-25	FRS	6 S-102	Note 1 - add 10.0m to elevation per comment S22 above.			
S6-26	FRS	6 S-103	Note 1 - add 10.0m to elevation per comment S22 above.			
S6-27	FRS	6 S-501	Detail 2 - revise callout to "Formed or tooled joint"			

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<b>STRUCTURAL COMMENTS - GUEST HOUSE - BUILDING NO. 6</b>						
S6-28	FRS	6 S-501	Detail 3 - Why cut any reinforcement if T/4 valley initiates weak plane shrink crack and rebar keeps the joint tight? - Also rebar is to be set lower than T/4 at T/3.			
S6-29	FRS	6 S-501	Detail 4 - consider moving 90 hook to clear edge of recess and enclose #14 bar.			
S6-30	FRS	6 S-501	Detail 5 - Provide bent bars across bottom of thickened slab perimeter to provide rebar in tension zone of thickened slab - lap to slab rebar.			
S6-31	FRS	6 S-511	Detail 4 - If intent is to splice slab bottom rebar, is 150mm minimum correct, seems 200mm is minimum for straight compression bar development?			
S6-32	FRS	6 S-512	Are there more than one Typical stirrup types? Are cross-ties required over a particular beam width?			
S6-33	FRS	6 S-513	Detail 3 - Is there additional horizontal reinforcement required at wall intersections and corners? General Masonry Note 20 indicates anchors, suggest a cross reference.			
S6-34	FRS	6 S-513	Detail 6 - Consider Option to provide dry-pack grout alternative to premoulded filler in case wall is constructed after upper slab. With consideration to any required firestopping detail.			
S6-35	FRS	6 S-513	Detail 6 - Instead of headed studs welded to embedded side of top connection plate, consider using threaded anchors with end nut "head" in slab and holes in top plate to pass rods down through bolted hole connection in L125x75 (ea side) to eliminate these field welds.			
S6-36	FRS	6 S-521	Detail 1 - correct spelling "slopped".			
S6-37	FRS	6 S-521	Consider showing bolted connections instead of field weld or suggest providing a note that indicates "Field bolted connections may be used in lieu of field welded connections."			
E6-1	FRS	6 E-501	Fill in data for Lighting Fixture Schedule.			

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Comment No.	Reviewer	Dwg Reference	Comment	Response Code	Response	Back-Check
<b>STRUCTURAL COMMENTS - DINING FACILITY - BUILDING NO. 7</b>						
S7-1	FRS	7 S-001 Abbreviations	AISC "Construction" not "Contractors"			
S7-2	FRS	7 S-001 Abbreviations	Add CB Concrete Beam & CS Concrete Slab			
S7-3	FRS	7 S-001 Abbreviations	Add "IJ" Isolation Joint			
S7-4	FRS	7 S-001 General Notes	Consider indicating the year/or edition of ACI, AISC, AWS to clarify the indicated referenced design criteria.			
S7-5	FRS	7 S-001 Design Loads	Wind load basic wind speed of 40 m/s indicated; UFC 3 301 01 (27Jan2010) lists 125 km/h (=34.7 m/s). What is source of 40 m/s value?			
S7-6	FRS	7 S-001 Design Loads	Seismic coefficients indicated as $S_s=1.13g$ ; $S_1=0.53g$ ; $S_d=0.78g$ & $S_d=0.53g$ - What was your source for $S_s/S_1$ ? Compared to UFC 3-310-01 (27Jan2010) lists $S_s=1.28g$ & $S_1=0.51g$ - (results in $S_d=0.83$ & $S_d=0.51$ ) is comparable to your calculated values.			
S7-7	FRS	7 S-001 Design Loads	Sloping Steel Roof Structure - Steel System not Specifically detailed for Seismic Resistance, Not Permitted for SDC D withn ASCE 7-05. Would it be appropriate to assign Special steel concentrically braced frames ( $R=6$ , etc.) for the truss roof?			
S7-8	FRS	7 S-001 Foundations	Suggest including note to indicate "Do not place foundation concrete when water is present in excavation."			
S7-9	FRS	7 S-001 CIP Concrete	Why not specify $f'_c = 27.5$ Mpa (4000psi)? Easily acheivable and has potential to reduce dead load and overall cost.			
S7-10	FRS	7 S-001 CIP Concrete	Suggest stating Average air entrainment of 5% recommended by ACI for freeze thaw resistance in moderate exposures - This seems appropriate for Kabul.			
S7-11	FRS	7 S-001 CIP Concrete	Per ACI 211.1-91 - w/c of 0.48 would be in line with a 27.5MPa (4000psi) air entrained mix using 19mm coarse aggregate producing about 75 to 100mm slump.			
S7-12	FRS	7 S-001 CIP Concrete	Indicate that potable water shall be used as concrete mix water to reduce the amount of undesirable components (chlorides, etc.).			
S7-13	FRS	7 S-002 CIP Concrete	Note 17 - include at last sentence ", except at expansion joints."			
S7-14	FRS	7 S-002 CIP Concrete	Note 20 - "Provide"			

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<b>STRUCTURAL COMMENTS - DINING FACILITY - BUILDING NO. 7</b>						
S7-15	FRS	7 S-002 CIP Concrete	Table #2 - Should Title read "Minimum Tension Lap Splice..." ?			
S7-16	FRS	7 S-002 CIP Concrete	Table #2 - Say minimum clearances no less than 25mm to accommodate placement of conc mix with 20mm coarse aggregate. Per ACI 318M-05 7.5.2.1 allows (-)10mm clear cover for slabs < 200mm thick and (-)13mm clear cover for >200mm thick. This reviewer would feel more comfortable with minimum clear cover of at least 25mm, even better with 40mm.			
S7-17	FRS	7 S-002 CIP Concrete	Table #2 - cast against earth should be "75mm"			
S7-18	FRS	7 S-002 CIP Concrete	Table #2 - suggest including "Pipes & Other Embedments....50mm"			
S7-19	FRS	6 S-002 Masonry	Note 9 - Indicate masonry to be placed in a running bond pattern.			
S7-20	FRS	7 S-002 Corr Metal Deck	Include Note 3 - Deck Fastening Requirements.			
S7-21	FRS	7 S-101	Note 1 - suggest FF datum EI 10.000 to eliminate "negative" subgrade elevations that may be confusing to field, especially if working on small format drawings.			
S7-22	FRS	7 S-101	Show all masonry wall locations.			
S7-23	FRS	7 S-101	Call out Entry and Courtyard on plan view.			
S7-24	FRS	7 S-101	Show any slab recess areas with section mark reference to Detail 4 S-501. Show thickened slab locations and reference with section 5 to S-501.			
S7-25	FRS	7 S-101	Show slab joint locations by type or a note that Final Design Engineer provide joint locations.			
S7-26	FRS	7 S-101	Indicate slab-on-grade bars connecting into structural slab - assumed this is a design condition (as mentioned in DA) for the complete or partially complete basic structure as required.			
S7-27	FRS	7 S-102	Change abbreviation "C" to "CS" for Concrete Slab			
S7-28	FRS	7 S-102	Note 1 - add 10.0m to elevation per comment S21 above.			
S7-29	FRS	7 S-102	Show concrete piers below along J line.			
S7-30	FRS	7 S-501	Detail 2 - revise callout to "Formed or tooled joint"			
S7-31	FRS	7 S-501	Detail 3 - Why cut any reinforcement if T/4 valley initiates weak plane shrink crack and rebar keeps the joint tight? - Also rebar is to be set lower than T/4 at T/3.			
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<b>STRUCTURAL COMMENTS - DINING FACILITY - BUILDING NO. 7</b>						
S7-33	FRS	7 S-501	Detail 5 - Provide bent bars across bottom of thickened slab perimeter to provide rebar in tension zone of thickened slab - lap to slab rebar.			
S7-34	FRS	7 S-501	Detail 6 - Show transverse bars.			
S7-35	FRS	7 S-501	Detail 7 - suggest calling detail "additional corner reinforcing" and pointing to both corner bars - or show vertical reinforcing in this detail.			
S7-36	FRS	7 S-501	Detail 8 - stop hooked dowels at lap point in wall above slab. Call out "typ" in column bubble. Change word "bond breaker" to "joint filler". Why is infill section deeper than slab - should it have a bond breaker at concrete column?			
S7-37	FRS	7 S-501	Detail 9 - fix slab dimension to 150mm. Why not use 12mm premoulded filler instead of 6mm - is 6mm enough? Fix clear cover leader line to bottom of footing bars.			
S7-38	FRS	7 S-501	Detail 10 - Call out "12mm thk premoulded joint filler". Slab rebar shows 90 deg hook at end, seems there will not be adequate depth - can rebar be terminated without a hook?			
S7-39	FRS	7 S-511	Detail 4 - If intent is to splice slab bottom rebar, is 150mm minimum correct, seems 200mm is minimum for straight compression bar development?			
S7-40	FRS	7 S-512	Are there more than one Typical stirrup types? Are cross-ties required over a particular beam width?			
S7-41	FRS	7 S-513	Consider a Note 4 - "Cast-In-Place reinforced bond beams may be used instead of lintel block units."			
S7-42	FRS	7 S-513	Detail 2 - Is there additional horizontal reinforcement required at wall intersections and corners? General Masonry Note 20 indicates anchors, suggest a cross reference.			
S7-43	FRS	7 S-513	Detail 3 - Consider Option to provide dry-pack grout alternative to premoulded filler in case wall is constructed after upper slab. With consideration to any required firestopping detail.			
S7-44	FRS	7 S-513	Detail 3 - Instead of headed studs welded to embedded side of top connection plate, consider using threaded anchors with end nut "head" in slab and holes in top plate to pass rods down through bolted hole connection in L125x75 (ea side) to eliminate these field welds.			
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S7-46	FRS	7 S-521	Consider showing bolted connections instead of field weld or suggest providing a note that indicates "Field bolted connections may be used in lieu of field welded connections."			
P7-01	FRS	7 P-101	Fix coded notes looks clipped off - show all.			
E1-1	FRS	7 E-502	Fill in data for Lighting Fixture Schedule.			

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S8-1	FRS	8 S-001 Abbreviations	AISC "Construction" not "Contractors"			
S8-2	FRS	8 S-001 Abbreviations	Add CB Concrete Beam & CS Concrete Slab			
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S8-4	FRS	8 S-001 General Notes	Consider indicating the year/or edition of ACI, AISC, AWS to clarify the indicated referenced design criteria.			
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S8-9	FRS	8 S-002 CIP Concrete	Why not specify $f'_c = 27.5$ Mpa (4000psi)? Easily acheivable and has potential to reduce dead load and overall cost.			
S8-10	FRS	8 S-002 CIP Concrete	Suggest stating Average air entrainment of 5% recommended by ACI for freeze thaw resistance in moderate exposures - This seems appropriate for Kabul.			
S8-11	FRS	8 S-002 CIP Concrete	Per ACI 211.1-91 - w/c of 0.48 would be in line with a 27.5MPa (4000psi) air entrained mix using 19mm coarse aggregate producing about 75 to 100mm slump.			
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S8-21	FRS	8 S-102	Note 1 - suggest FF datum El 10.000 to eliminate "negative" subgrade elevations that may be confusing to field, especially if working on small format drawings.			
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S8-27	FRS	8 S-102	Change abbreviation "C" to "CS" for Concrete Slab			
S8-28	FRS	8 S-102	Note 1 - add 10.0m to elevation per comment S21 above.			
S8-29	FRS	8 S-102	Show concrete piers below along J line.			
S8-30	FRS	8 S-501	Detail 2 - revise callout to "Formed or tooled joint"			
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S8-40	FRS	8 S-512	Are there more than one Typical stirrup types? Are cross-ties required over a particular beam width?			
S8-41	FRS	8 S-513	Detail 3 - Is there additional horizontal reinforcement required at wall intersections and corners? General Masonry Note 20 indicates anchors, suggest a cross reference.			
S8-42	FRS	8 S-513	Detail 6 - Consider Option to provide dry-pack grout alternative to premoulded filler in case wall is constructed after upper slab. With consideration to any required firestopping detail.			
S8-43	FRS	8 S-513	Detail 6 - Instead of headed studs welded to embedded side of top connection plate, consider using threaded anchors with end nut "head" in slab and holes in top plate to pass rods down through bolted hole connection in L125x75 (ea side) to eliminate these field welds.			
S8-44	FRS	8 S-521	Detail 1 - correct spelling "slopped".			

WO-A-0033

Structural Review Comments - Schematic Design Submittal

Ministry of Public Health - Headquarters Campus

Kabul, Afghanistan

Submittal Date: 10-Mar-10

Review Date: 19-May-10

Reviewed By:



URS PROJECT NO: 31943406

Comment No.	Reviewer	Dwg Reference	Comment	Response Code	Response	Back-Check
STRUCTURAL COMMENTS - GUARD HOUSE - BUILDING NO. 8						
S8-45	FRS	8 S-521	Consider showing bolted connections instead of field weld or suggest providing a note that indicates "Field bolted connections may be used in lieu of field welded connections."			
S8-46	FRS	8 S-521	Detail 3 - move conc wall callout to clear other notes.			
P8-01	FRS	8 P-101	Fix coded notes looks clipped off - show all.			
E8-1	FRS	8 E-501	Fill in data for Lighting Fixture Schedule.			

WO-A-0033

# Structural Review Comments - Schematic Design Submittal

Ministry of Public Health - Headquarters Campus

Kabul, Afganistan

URS PROJECT NO: 31943406

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Comment No.	Reviewer	Dwg Reference	Comment	Response Code	Response	Back-Check
<b>STRUCTURAL COMMENTS - ENGINEERING DESIGN CENTER - BUILDING NO. 9</b>						
S9-1	FRS	9 S-001 Abbreviations	AISC "Construction" not "Contractors"			
S9-2	FRS	9 S-001 General Notes	Consider indicating the year/or edition of ACI, AISC, AWS to clarify the indicated referenced design criteria.			
S9-3	FRS	9 S-001 Design Loads	Wind load basic wind speed of 40 m/s indicated; UFC 3 301 01 (27Jan2010) lists 125 km/h (=34.7 m/s). What is source of 40 m/s value?			
S9-4	FRS	9 S-001 Design Loads	Seismic coefficients indicated as Ss=1.13g; S1=0.53g; Sds=0.78g & Sd1=0.53g - What was your source for Ss/S1? Compared to UFC 3-310-01 (27Jan2010) lists Ss=1.28g & S1=0.51g - (results in Sds=0.83 & Sd1=0.51) is comparable to your calculated values.			
S9-5	FRS	9 S-001 Design Loads	Sloping Steel Roof Structure - Steel System not Specifically detailed for Seismic Resistance, Not Permitted for SDC D withn ASCE 7-05. Would it be appropriate to assign Special steel concentrically braced frames (R=6, etc.) for the truss roof?			
S9-6	FRS	9 S-001 Foundations	Suggest including note to indicate "Do not place foundation concrete when water is present in excavation."			
S9-7	FRS	9 S-002 CIP Concrete	Why not specify f'c = 27.5 Mpa (4000psi)? Easily acheivable and has potential to reduce dead load and overall cost.			
S9-8	FRS	9 S-002 CIP Concrete	Suggest stating Average air entrainment of 5% recommended by ACI for freeze thaw resistance in moderate exposures - This seems appropriate for Kabul.			
S9-9	FRS	9 S-002 CIP Concrete	Per ACI 211.1-91 - w/c of 0.48 would be in line with a 27.5MPa (4000psi) air entrained mix using 19mm coarse aggregate producing about 75 to 100mm slump.			
S9-10	FRS	9 S-002 CIP Concrete	Indicate that potable water shall be used as concrete mix water to reduce the amount of undesirable components (chlorides, etc.).			
S9-11	FRS	9 S-002 CIP Concrete	Note 17 - include at last sentence ", except at expansion joints."			
S9-12	FRS	9 S-002 CIP Concrete	Note 20 - "Provide"			

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Structural Review Comments - Schematic Design Submittal

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Comment No.	Reviewer	Dwg Reference	Comment	Response Code	Response	Back-Check
<b>STRUCTURAL COMMENTS - ENGINEERING DESIGN CENTER - BUILDING NO. 9</b>						
S9-13	FRS	9 S-002 CIP Concrete	Table #2 - Say minimum clearances no less than 25mm to accommodate placement of conc mix with 20mm coarse aggregate. Per ACI 318M-05 7.5.2.1 allows (-)10mm clear cover for slabs < 200mm thick and (-)13mm clear cover for >200mm thick. This reviewer would feel more comfortable with minimum clear cover of at least 25mm, even better with 40mm.			
S9-14	FRS	9 S-002 CIP Concrete	Table #2 - cast against earth should be "75mm"			
S9-15	FRS	9 S-002 CIP Concrete	Table #2 - suggest including "Pipes & Other Embedments....50mm"			
S9-16	FRS	9 S-002 Masonry	Note 9 - Indicate masonry to be placed in a running bond pattern.			
S9-17	FRS	9 S-002 Struct Steel	Note 7 - Consider that a substantial hot-dipped galvanizing facility may not be readily available and may distort bid cost for str steel fabrication because there may be increased shipping costs driving the bid item. Consider a Painting note such as "Shop prime all steel not encased in concrete or not required to have spray-applied fireproofing. Provide finish coatings as recommended by coating manufacturer."			
S9-18	FRS	9 S-002 Corr Metal Deck	Include Note 3 - Deck Fastening Requirements.			
S9-19	FRS	9 S-101	Should Stepped Foundation be indicated for wall foundation walls near D2 and D5?			
S9-20	FRS	9 S-102	Note 1 - suggest FF datum El 10.000 to eliminate "negative" subgrade elevations that may be confusing to field, especially if working on small format drawings.			
S9-21	FRS	9 S-102	Show any slab recess areas with section mark reference to Detail 4 S-501. Show thickened slab locations and reference with section 5 to S-501.			
S9-22	FRS	9 S-102	Show slab joint locations by type or a note that Final Design Engineer provide joint locations.			
S9-23	FRS	9 S-102	Indicate slab-on-grade bars connecting into structural slab - assumed this is a design condition (as mentioned in DA) for the complete or partially complete basic structure as required.			
S9-24	FRS	9 S-102	Note 1 - add 10.0m to elevation per comment S20 above.			
S9-25	FRS	9 S-102	Show concrete piers below along J line.			
S9-26	FRS	9 S-501	Detail 2 - revise callout to "Formed or tooled joint"			

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Comment No.	Reviewer	Dwg Reference	Comment	Response Code	Response	Back-Check
<b>STRUCTURAL COMMENTS - ENGINEERING DESIGN CENTER - BUILDING NO. 9</b>						
S9-27	FRS	9 S-501	Detail 3 - Why cut any reinforcement if T/4 valley initiates weak plane shrink crack and rebar keeps the joint tight? - Also rebar is to be set lower than T/4 at T/3.			
S9-28	FRS	9 S-501	Detail 4 - consider moving 90 hook to clear edge of recess and enclose #14 bar.			
S9-29	FRS	9 S-501	Detail 5 - Provide bent bars across bottom of thickened slab perimeter to provide rebar in tension zone of thickened slab - lap to slab rebar.			
S9-30	FRS	9 S-501	Detail 6 - Show transverse bars.			
S9-31	FRS	9 S-511	Detail 4 - If intent is to splice slab bottom rebar, is 150mm minimum correct, seems 200mm is minimum for straight compression bar development?			
S9-32	FRS	9 S-512	Are there more than one Typical stirrup types? Are cross-ties required over a particular beam width?			
S9-33	FRS	9 S-513	Detail 3 - Is there additional horizontal reinforcement required at wall intersections and corners? General Masonry Note 20 indicates anchors, suggest a cross reference.			
S9-34	FRS	9 S-513	Detail 6 - Consider Option to provide dry-pack grout alternative to premoulded filler in case wall is constructed after upper slab. With consideration to any required firestopping detail.			
S9-35	FRS	9 S-513	Detail 6 - Instead of headed studs welded to embedded side of top connection plate, consider using threaded anchors with end nut "head" in slab and holes in top plate to pass rods down through bolted hole connection in L125x75 (ea side) to eliminate these field welds.			
S9-36	FRS	9 S-521	Detail 1 - correct spelling "slopped".			
S9-37	FRS	9 S-521	Consider showing bolted connections instead of field weld or suggest providing a note that indicates "Field bolted connections may be used in lieu of field welded connections."			
S9-38	FRS	9 S-521	Detail 3 - move conc wall callout to clear other notes.			
E9-1	FRS	9 E-501	Fill in data for Lighting Fixture Schedule.			

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Comment No.	Reviewer	Dwg Reference	Comment	Response Code	Response	Back-Check
<b>STRUCTURAL COMMENTS - HEATING PLANT - BUILDING NO. 10</b>						
S10-1	FRS	10 S-001 Abbreviations	AISC "Construction" not "Contractors"			
S10-2	FRS	10 S-001 General Notes	Consider indicating the year/or edition of ACI, AISC, AWS to clarify the indicated referenced design criteria.			
S10-3	FRS	10 S-001 Design Loads	Wind load basic wind speed of 40 m/s indicated; UFC 3 301 01 (27Jan2010) lists 125 km/h (=34.7 m/s). What is source of 40 m/s value?			
S10-4	FRS	10 S-001 Design Loads	Seismic coefficients indicated as $S_s=1.13g$ ; $S_1=0.53g$ ; $S_d=0.78g$ & $S_d=0.53g$ - What was your source for $S_s/S_1$ ? Compared to UFC 3-310-01 (27Jan2010) lists $S_s=1.28g$ & $S_1=0.51g$ - (results in $S_d=0.83$ & $S_d=0.51$ ) is comparable to your calculated values.			
S10-5	FRS	10 S-001 Design Loads	Sloping Steel Roof Structure - Steel System not Specifically detailed for Seismic Resistance, Not Permitted for SDC D withn ASCE 7-05. Would it be appropriate to assign Special steel concentrically braced frames ( $R=6$ , etc.) for the truss roof?			
S10-6	FRS	10 S-001 Foundations	Suggest including note to indicate "Do not place foundation concrete when water is present in excavation."			
S10-7	FRS	10 S-002 CIP Concrete	Why not specify $f'_c = 27.5$ Mpa (4000psi)? Easily acheivable and has potential to reduce dead load and overall cost.			
S10-8	FRS	10 S-002 CIP Concrete	Suggest stating Average air entrainment of 5% recommended by ACI for freeze thaw resistance in moderate exposures - This seems appropriate for Kabul.			
S10-9	FRS	10 S-002 CIP Concrete	Per ACI 211.1-91 - w/c of 0.48 would be in line with a 27.5MPa (4000psi) air entrained mix using 19mm coarse aggregate producing about 75 to 100mm slump.			
S10-10	FRS	10 S-002 CIP Concrete	Indicate that potable water shall be used as concrete mix water to reduce the amount of undesirable components (chlorides, etc.).			
S10-11	FRS	10 S-002 CIP Concrete	Note 17 - include at last sentence ", except at expansion joints."			
S10-12	FRS	10 S-002 CIP Concrete	Note 20 - "Provide"			

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<b>STRUCTURAL COMMENTS - HEATING PLANT - BUILDING NO. 10</b>						
S10-13	FRS	10 S-002 CIP Concrete	Table #2 - Say minimum clearances no less than 25mm to accommodate placement of conc mix with 20mm coarse aggregate. Per ACI 318M-05 7.5.2.1 allows (-)10mm clear cover for slabs < 200mm thick and (-)13mm clear cover for >200mm thick. This reviewer would feel more comfortable with minimum clear cover of at least 25mm, even better with 40mm.			
S10-14	FRS	10 S-002 CIP Concrete	Table #2 - cast against earth should be "75mm"			
S10-15	FRS	10 S-002 CIP Concrete	Table #2 - suggest including "Pipes & Other Embedments...50mm"			
S10-16	FRS	10 S-002 Masonry	Note 9 - Indicate masonry to be placed in a running bond pattern.			
S10-17	FRS	10 S-002 Struct Steel	Note 7 - Consider that a substantial hot-dipped galvanizing facility may not be readily available and may distort bid cost for str steel fabrication because there may be increased shipping costs driving the bid item. Consider a Painting note such as "Shop prime all steel not encased in concrete or not required to have spray-applied fireproofing. Provide finish coatings as recommended by coating manufacturer."			
S10-18	FRS	10 S-002 Corr Metal Deck	Include Note 3 - Deck Fastening Requirements.			
S10-19	FRS	10 S-101	Should Stepped Foundation be indicated for wall foundation walls near D2 and D5?			
S10-20	FRS	10 S-102	Note 1 - suggest FF datum El 10.000 to eliminate "negative" subgrade elevations that may be confusing to field, especially if working on small format drawings.			
S10-21	FRS	10 S-102	Show any slab recess areas with section mark reference to Detail 4 S-501. Show thickened slab locations and reference with section 5 to S-501.			
S10-22	FRS	10 S-102	Show slab joint locations by type or a note that Final Design Engineer provide joint locations.			
S10-23	FRS	10 S-102	Indicate slab-on-grade bars connecting into structural slab - assumed this is a design condition (as mentioned in DA) for the complete or partially complete basic structure as required.			
S10-24	FRS	10 S-102	Note 1 - add 10.0m to elevation per comment S20 above.			
S10-25	FRS	10 S-102	Show concrete piers below along J line.			
S10-26	FRS	10 S-501	Detail 2 - revise callout to "Formed or tooled joint"			

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Comment No.	Reviewer	Dwg Reference	Comment	Response Code	Response	Back-Check
<b>STRUCTURAL COMMENTS - HEATING PLANT - BUILDING NO. 10</b>						
S10-27	FRS	10 S-501	Detail 3 - Why cut any reinforcement if T/4 valley initiates weak plane shrink crack and rebar keeps the joint tight? - Also rebar is to be set lower than T/4 at T/3.			
S10-28	FRS	10 S-501	Detail 4 - consider moving 90 hook to clear edge of recess and enclose #14 bar.			
S10-29	FRS	10 S-501	Detail 5 - Provide bent bars across bottom of thickened slab perimeter to provide rebar in tension zone of thickened slab - lap to slab rebar.			
S10-30	FRS	10 S-501	Detail 6 - Show transverse bars.			
S10-31	FRS	10 S-511	Detail 4 - If intent is to splice slab bottom rebar, is 150mm minimum correct, seems 200mm is minimum for straight compression bar development?			
S10-32	FRS	10 S-512	Are there more than one Typical stirrup types? Are cross-ties required over a particular beam width?			
S10-33	FRS	10 S-513	Detail 3 - Is there additional horizontal reinforcement required at wall intersections and corners? General Masonry Note 20 indicates anchors, suggest a cross reference.			
S10-34	FRS	10 S-513	Detail 6 - Consider Option to provide dry-pack grout alternative to premoulded filler in case wall is constructed after upper slab. With consideration to any required firestopping detail.			
S10-35	FRS	10 S-513	Detail 6 - Instead of headed studs welded to embedded side of top connection plate, consider using threaded anchors with end nut "head" in slab and holes in top plate to pass rods down through bolted hole connection in L125x75 (ea side) to eliminate these field welds.			
S10-36	FRS	10 S-521	Detail 1 - correct spelling "slopped".			
S10-37	FRS	10 S-521	Consider showing bolted connections instead of field weld or suggest providing a note that indicates "Field bolted connections may be used in lieu of field welded connections."			
S10-38	FRS	10 S-521	Detail 3 - move conc wall callout to clear other notes.			
E10-1	FRS	10 E-501	Fill in data for Lighting Fixture Schedule.			

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Comment No.	Reviewer	Dwg Reference	Comment	Response Code	Response	Back-Check
<b>STRUCTURAL COMMENTS - GENERATOR HOUSE - BUILDING NO. 11</b>						
S11-1	FRS	11 S-001 Abbreviations	AISC "Construction" not "Contractors"			
S11-2	FRS	11 S-001 General Notes	Consider indicating the year/or edition of ACI, AISC, AWS to clarify the indicated referenced design criteria.			
S11-3	FRS	11 S-001 Design Loads	Wind load basic wind speed of 40 m/s indicated; UFC 3 301 01 (27Jan2010) lists 125 km/h (=34.7 m/s). What is source of 40 m/s value?			
S11-4	FRS	11 S-001 Design Loads	Seismic coefficients indicated as $S_s=1.13g$ ; $S_1=0.53g$ ; $S_d=0.78g$ & $S_d1=0.53g$ - What was your source for $S_s/S_1$ ? Compared to UFC 3-310-01 (27Jan2010) lists $S_s=1.28g$ & $S_1=0.51g$ - (results in $S_d=0.83$ & $S_d1=0.51$ ) is comparable to your calculated values.			
S11-5	FRS	11 S-001 Design Loads	Sloping Steel Roof Structure - Steel System not Specifically detailed for Seismic Resistance, Not Permitted for SDC D withn ASCE 7-05. Would it be appropriate to assign Special steel concentrically braced frames ( $R=6$ , etc.) for the truss roof?			
S11-6	FRS	11 S-001 Foundations	Suggest including note to indicate "Do not place foundation concrete when water is present in excavation."			
S11-7	FRS	11 S-002 CIP Concrete	Why not specify $f'_c = 27.5$ Mpa (4000psi)? Easily acheivable and has potential to reduce dead load and overall cost.			
S11-8	FRS	11 S-002 CIP Concrete	Suggest stating Average air entrainment of 5% recommended by ACI for freeze thaw resistance in moderate exposures - This seems appropriate for Kabul.			
S11-9	FRS	11 S-002 CIP Concrete	Per ACI 211.1-91 - w/c of 0.48 would be in line with a 27.5MPa (4000psi) air entrained mix using 19mm coarse aggregate producing about 75 to 100mm slump.			
S11-10	FRS	11 S-002 CIP Concrete	Indicate that potable water shall be used as concrete mix water to reduce the amount of undesirable components (chlorides, etc.).			
S11-11	FRS	11 S-002 CIP Concrete	Note 17 - include at last sentence ", except at expansion joints."			
S11-12	FRS	11 S-002 CIP Concrete	Note 20 - "Provide"			

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Comment No.	Reviewer	Dwg Reference	Comment	Response Code	Response	Back-Check
<b>STRUCTURAL COMMENTS - GENERATOR HOUSE - BUILDING NO. 11</b>						
S11-13	FRS	11 S-002 CIP Concrete	Table #2 - Say minimum clearances no less than 25mm to accommodate placement of conc mix with 20mm coarse aggregate. Per ACI 318M-05 7.5.2.1 allows (-)10mm clear cover for slabs < 200mm thick and (-)13mm clear cover for >200mm thick. This reviewer would feel more comfortable with minimum clear cover of at least 25mm, even better with 40mm.			
S11-14	FRS	11 S-002 CIP Concrete	Table #2 - cast against earth should be "75mm"			
S11-15	FRS	11 S-002 CIP Concrete	Table #2 - suggest including "Pipes & Other Embedments....50mm"			
S11-16	FRS	11 S-002 Masonry	Note 9 - Indicate masonry to be placed in a running bond pattern.			
S11-17	FRS	11 S-002 Corr Metal Deck	Include Note 3 - Deck Fastening Requirements.			
S11-18	FRS	11 S-002 Struct Steel	Note 7 - Consider that a substantial hot-dipped galvanizing facility may not be readily available and may distort bid cost for str steel fabrication because there may be increased shipping costs driving the bid item. Consider a Painting note such as "Shop prime all steel not encased in concrete or not required to have spray-applied fireproofing. Provide finish coatings as recommended by coating manufacturer."			
S11-19	FRS	11 S-101	Note 1 - suggest FF datum EI 10.000 to eliminate "negative" subgrade elevations that may be confusing to field, especially if working on small format drawings.			
S11-20	FRS	11 S-101	Show any slab recess areas with section mark reference to Detail 4 S-501. Show thickened slab locations and reference with section 5 to S-501.			
S11-21	FRS	11 S-101	Show slab joint locations by type or a note that Final Design Engineer provide joint locations.			
S11-22	FRS	11 S-101	Indicate slab-on-grade bars connecting into structural slab - assumed this is a design condition (as mentioned in DA) for the complete or partially complete basic structure as required.			
S11-23	FRS	11 S-102	Note 1 - add 10.0m to elevation per comment S19 above.			
S11-24	FRS	11 S-102	Should a concrete slab beam be shown along B line?			
S11-25	FRS	11 S-501	Detail 2 - revise callout to "Formed or tooled joint"			
S11-26	FRS	11 S-501	Detail 3 - Why cut any reinforcement if T/4 valley initiates weak plane shrink crack and rebar keeps the joint tight? - Also rebar is to be set lower than T/4 at T/3.			

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Comment No.	Reviewer	Dwg Reference	Comment	Response Code	Response	Back-Check
<b>STRUCTURAL COMMENTS - GENERATOR HOUSE - BUILDING NO. 11</b>						
S11-27	FRS	11 S-501	Detail 4 - consider moving 90 hook to clear edge of recess and enclose #14 bar.			
S11-28	FRS	11 S-501	Detail 5 - Provide bent bars across bottom of thickened slab perimeter to provide rebar in tension zone of thickened slab - lap to slab rebar.			
S11-29	FRS	11 S-501	Detail 6 - Show transverse bars.			
S11-30	FRS	11 S-511	Detail 1 - Are there any one-way slabs?			
S11-31	FRS	11 S-511	Detail 2 - Revise for two way slab if applies.			
S11-32	FRS	11 S-511	Detail 4 - If intent is to splice slab bottom rebar, is 150mm minimum correct, seems 200mm is minimum for straight compression bar development?			
S11-33	FRS	11 S-512	Are there more than one Typical stirrup types? Are cross-ties required over a particular beam width?			
S11-34	FRS	11 S-513	Detail 3 - Is there additional horizontal reinforcement required at wall intersections and corners? General Masonry Note 20 indicates anchors, suggest a cross reference.			
S11-35	FRS	11 S-513	Detail 6 - Consider Option to provide dry-pack grout alternative to premoulded filler in case wall is constructed after upper slab. With consideration to any required firestopping detail.			
S11-36	FRS	11 S-513	Detail 6 - Instead of headed studs welded to embedded side of top connection plate, consider using threaded anchors with end nut "head" in slab and holes in top plate to pass rods down through bolted hole connection in L125x75 (ea side) to eliminate these field welds.			
S11-37	FRS	11 S-521	Detail 1 - correct spelling "slopped".			
S11-38	FRS	11 S-521	Consider showing bolted connections instead of field weld or suggest providing a note that indicates "Field bolted connections may be used in lieu of field welded connections."			
S11-39	FRS	11 S-521	Detail 3 - move conc wall callout to clear other notes.			
E11-1	FRS	11 E-501	Fill in data for Lighting Fixture Schedule.			

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Kabul, Afghanistan

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Submittal Date: 10-Mar-10

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Comment No.	Reviewer	Dwg Reference	Comment	Response Code	Response	Back-Check
<b>STRUCTURAL COMMENTS - DAY CARE CENTER - BUILDING NO. 12</b>						
S12-1	FRS	12 S-001 Abbreviations	AISC "Construction" not "Contractors"			
S12-2	FRS	12 S-001 General Notes	Consider indicating the year/or edition of ACI, AISC, AWS to clarify the indicated referenced design criteria.			
S12-3	FRS	12 S-001 Design Loads	Wind load basic wind speed of 40 m/s indicated; UFC 3 301 01 (27Jan2010) lists 125 km/h (=34.7 m/s). What is source of 40 m/s value?			
S12-4	FRS	12 S-001 Design Loads	Seismic coefficients indicated as Ss=1.13g; S1=0.53g; Sds=0.78g & Sd1=0.53g - What was your source for Ss/S1? Compared to UFC 3-310-01 (27Jan2010) lists Ss=1.28g & S1=0.51g - (results in Sds=0.83 & Sd1=0.51) is comparable to your calculated values.			
S12-5	FRS	12 S-001 Design Loads	Sloping Steel Roof Structure - Steel System not Specifically detailed for Seismic Resistance, Not Permitted for SDC D withn ASCE 7-05. Would it be appropriate to assign Special steel concentrically braced frames (R=6, etc.) for the truss roof?			
S12-6	FRS	12 S-001 Foundations	Suggest including note to indicate "Do not place foundation concrete when water is present in excavation."			
S12-7	FRS	12 S-002 CIP Concrete	Why not specify f'c = 27.5 Mpa (4000psi)? Easily achievable and has potential to reduce dead load and overall cost.			
S12-8	FRS	12 S-002 CIP Concrete	Suggest stating Average air entrainment of 5% recommended by ACI for freeze thaw resistance in moderate exposures - This seems appropriate for Kabul.			
S12-9	FRS	12 S-002 CIP Concrete	Per ACI 211.1-91 - w/c of 0.48 would be in line with a 27.5MPa (4000psi) air entrained mix using 19mm coarse aggregate producing about 75 to 100mm slump.			
S12-10	FRS	12 S-002 CIP Concrete	Indicate that potable water shall be used as concrete mix water to reduce the amount of undesirable components (chlorides, etc.).			
S12-11	FRS	12 S-002 CIP Concrete	Note 17 - include at last sentence ", except at expansion joints."			
S12-12	FRS	12 S-002 CIP Concrete	Note 20 - "Provide"			

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Comment No.	Reviewer	Dwg Reference	Comment	Response Code	Response	Back-Check
<b>STRUCTURAL COMMENTS - DAY CARE CENTER - BUILDING NO. 12</b>						
S12-13	FRS	12 S-002 CIP Concrete	Table #2 - Say minimum clearances no less than 25mm to accommodate placement of conc mix with 20mm coarse aggregate. Per ACI 318M-05 7.5.2.1 allows (-)10mm clear cover for slabs < 200mm thick and (-)13mm clear cover for >200mm thick. This reviewer would feel more comfortable with minimum clear cover of at least 25mm, even better with 40mm.			
S12-14	FRS	12 S-002 CIP Concrete	Table #2 - cast against earth should be "75mm"			
S12-15	FRS	12 S-002 CIP Concrete	Table #2 - suggest including "Pipes & Other Embedments....50mm"			
S12-16	FRS	12 S-002 Masonry	Note 9 - Indicate masonry to be placed in a running bond pattern.			
S12-17	FRS	12 S-002 Struct Steel	Note 7 - Consider that a substantial hot-dipped galvanizing facility may not be readily available and may distort bid cost for str steel fabrication because there may be increased shipping costs driving the bid item. Consider a Painting note such as "Shop prime all steel not encased in concrete or not required to have spray-applied fireproofing. Provide finish coatings as recommended by coating manufacturer."			
S12-18	FRS	12 S-002 Corr Metal Deck	Include Note 3 - Deck Fastening Requirements.			
S12-19	FRS	12 S-101	Note 1 - suggest FF datum El 10.000 to eliminate "negative" subgrade elevations that may be confusing to field, especially if working on small format drawings.			
S12-20	FRS	12 S-101	Show any slab recess areas with section mark reference to Detail 4 S-501. Show thickened slab locations and reference with section 5 to S-501.			
S12-21	FRS	12 S-101	Show slab joint locations by type or a note that Final Design Engineer provide joint locations.			
S12-22	FRS	12 S-101	Indicate slab-on-grade bars connecting into structural slab - assumed this is a design condition (as mentioned in DA) for the complete or partially complete basic structure as required.			
S12-23	FRS	12 S-102	Note 1 - add 10.0m to elevation per comment S19 above.			
S12-24	FRS	12 S-501	Detail 2 - revise callout to "Formed or tooled joint"			
S12-25	FRS	12 S-501	Detail 3 - Why cut any reinforcement if T/4 valley initiates weak plane shrink crack and rebar keeps the joint tight? - Also rebar is to be set lower than T/4 at T/3.			

WO-A-0033

# Structural Review Comments - Schematic Design Submittal

Ministry of Public Health - Headquarters Campus

Kabul, Afghanistan

URS PROJECT NO: 31943406

Submittal Date: 10-Mar-10

Review Date: 19-May-10

Reviewed By:



Comment No.	Reviewer	Dwg Reference	Comment	Response Code	Response	Back-Check
<b>STRUCTURAL COMMENTS - DAY CARE CENTER - BUILDING NO. 12</b>						
S12-26	FRS	12 S-501	Detail 4 - consider moving 90 hook to clear edge of recess and enclose #14 bar.			
S12-27	FRS	12 S-501	Detail 5 - Provide bent bars across bottom of thickened slab perimeter to provide rebar in tension zone of thickened slab - lap to slab rebar.			
S12-28	FRS	12 S-501	Detail 6 - Show transverse bars.			
S12-29	FRS	12 S-511	Detail 4 - If intent is to splice slab bottom rebar, is 150mm minimum correct, seems 200mm is minimum for straight compression bar development?			
S12-30	FRS	12 S-512	Are there more than one Typical stirrup types? Are cross-ties required over a particular beam width?			
S12-31	FRS	12 S-513	Detail 3 - Is there additional horizontal reinforcement required at wall intersections and corners? General Masonry Note 20 indicates anchors, suggest a cross reference.			
S12-32	FRS	12 S-513	Detail 6 - Consider Option to provide dry-pack grout alternative to premoulded filler in case wall is constructed after upper slab. With consideration to any required firestopping detail.			
S12-33	FRS	12 S-513	Detail 6 - Instead of headed studs welded to embedded side of top connection plate, consider using threaded anchors with end nut "head" in slab and holes in top plate to pass rods down through bolted hole connection in L125x75 (ea side) to eliminate these field welds.			
S12-34	FRS	12 S-521	Detail 1 - correct spelling "slopped".			
S12-35	FRS	12 S-521	Consider showing bolted connections instead of field weld or suggest providing a note that indicates "Field bolted connections may be used in lieu of field welded connections."			
S12-36	FRS	12 S-521	Detail 3 - move conc wall callout to clear other notes.			
E12-1	FRS	12 E-501	Fill in data for Lighting Fixture Schedule.			

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Structural Review Comments - Schematic Design Submittal

Ministry of Public Health - Headquarters Campus

Kabul, Afghanistan

URS PROJECT NO: 31943406

Submittal Date: 10-Mar-10

Review Date: 19-May-10

Reviewed By:



Comment No.	Reviewer	Dwg Reference	Comment	Response Code	Response	Back-Check
<b>STRUCTURAL COMMENTS - MOTOR POOL - BUILDING NO. 13</b>						
S13-1	FRS	13 S-001 Abbreviations	AISC "Construction" not "Contractors"			
S13-2	FRS	13 S-001 General Notes	Consider indicating the year/or edition of ACI, AISC, AWS to clarify the indicated referenced design criteria.			
S13-3	FRS	13 S-001 Design Loads	Wind load basic wind speed of 40 m/s indicated; UFC 3 301 01 (27Jan2010) lists 125 km/h (=34.7 m/s). What is source of 40 m/s value?			
S13-4	FRS	13 S-001 Design Loads	Seismic coefficients indicated as $S_s=1.13g$ ; $S_1=0.53g$ ; $S_d=0.78g$ & $S_d=0.53g$ - What was your source for $S_s/S_1$ ? Compared to UFC 3-310-01 (27Jan2010) lists $S_s=1.28g$ & $S_1=0.51g$ - (results in $S_d=0.83$ & $S_d=0.51$ ) is comparable to your calculated values.			
S13-5	FRS	13 S-001 Design Loads	Sloping Steel Roof Structure - Steel System not Specifically detailed for Seismic Resistance, Not Permitted for SDC D withn ASCE 7-05. Would it be appropriate to assign Special steel concentrically braced frames ( $R=6$ , etc.) for the truss roof?			
S13-6	FRS	13 S-001 Foundations	Suggest including note to indicate "Do not place foundation concrete when water is present in excavation."			
S13-7	FRS	13 S-002 CIP Concrete	Why not specify $f'_c = 27.5 \text{ Mpa}$ (4000psi)? Easily acheivable and has potential to reduce dead load and overall cost.			
S13-8	FRS	13 S-002 CIP Concrete	Suggest stating Average air entrainment of 5% recommended by ACI for freeze thaw resistance in moderate exposures - This seems appropriate for Kabul.			
S13-9	FRS	13 S-002 CIP Concrete	Per ACI 211.1-91 - w/c of 0.48 would be in line with a 27.5MPa (4000psi) air entrained mix using 19mm coarse aggregate producing about 75 to 100mm slump.			
S13-10	FRS	13 S-002 CIP Concrete	Indicate that potable water shall be used as concrete mix water to reduce the amount of undesirable components (chlorides, etc.).			
S13-11	FRS	13 S-002 CIP Concrete	Note 17 - include at last sentence ", except at expansion joints."			
S13-12	FRS	13 S-002 CIP Concrete	Note 20 - "Provide"			

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Kabul, Afghanistan

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Comment No.	Reviewer	Dwg Reference	Comment	Response Code	Response	Back-Check
<b>STRUCTURAL COMMENTS - MOTOR POOL - BUILDING NO. 13</b>						
S13-13	FRS	13 S-002 CIP Concrete	Table #2 - Say minimum clearances no less than 25mm to accommodate placement of conc mix with 20mm coarse aggregate. Per ACI 318M-05 7.5.2.1 allows (-)10mm clear cover for slabs < 200mm thick and (-)13mm clear cover for >200mm thick. This reviewer would feel more comfortable with minimum clear cover of at least 25mm, even better with 40mm.			
S13-14	FRS	13 S-002 CIP Concrete	Table #2 - cast against earth should be "75mm"			
S13-15	FRS	13 S-002 CIP Concrete	Table #2 - suggest including "Pipes & Other Embedments...50mm"			
S13-16	FRS	13 S-002 Masonry	Note 9 - Indicate masonry to be placed in a running bond pattern.			
S13-17	FRS	13 S-002 Struct Steel	Note 7 - Consider that a substantial hot-dipped galvanizing facility may not be readily available and may distort bid cost for str steel fabrication because there may be increased shipping costs driving the bid item. Consider a Painting note such as "Shop prime all steel not encased in concrete or not required to have spray-applied fireproofing. Provide finish coatings as recommended by coating manufacturer."			
S13-18	FRS	13 S-002 Corr Metal Deck	Include Note 3 - Deck Fastening Requirements.			
S13-19	FRS	13 S-101	Note 1 - suggest FF datum El 10.000 to eliminate "negative" subgrade elevations that may be confusing to field, especially if working on small format drawings.			
S13-20	FRS	13 S-101	Show any slab recess areas with section mark reference to Detail 4 S-501. Show thickened slab locations and reference with section 5 to S-501. Is a particular typical detail required for break in SOG slope when for slopes down to trench drains?			
S13-21	FRS	13 S-101	Show slab joint locations by type or a note that Final Design Engineer provide joint locations.			
S13-22	FRS	13 S-101	Indicate slab-on-grade bars connecting into structural slab - assumed this is a design condition (as mentioned in DA) for the complete or partially complete basic structure as required.			
S13-23	FRS	13 S-102	Note 1 - add 10.0m to elevation per comment S19 above.			
S13-24	FRS	13 S-501	Detail 2 - revise callout to "Formed or tooled joint"			

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Kabul, Afghanistan

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Comment No.	Reviewer	Dwg Reference	Comment	Response Code	Response	Back-Check
<b>STRUCTURAL COMMENTS - MOTOR POOL - BUILDING NO. 13</b>						
S13-25	FRS	13 S-501	Detail 3 - Why cut any reinforcement if T/4 valley initiates weak plane shrink crack and rebar keeps the joint tight? - Also rebar is to be set lower than T/4 at T/3.			
S13-26	FRS	13 S-501	Detail 4 - consider moving 90 hook to clear edge of recess and enclose #14 bar.			
S13-27	FRS	13 S-501	Detail 5 - Provide bent bars across bottom of thickened slab perimeter to provide rebar in tension zone of thickened slab - lap to slab rebar.			
S13-28	FRS	13 S-501	Detail 6 - Show transverse bars.			
S13-29	FRS	13 S-511	Detail 4 - If intent is to splice slab bottom rebar, is 150mm minimum correct, seems 200mm is minimum for straight compression bar development?			
S13-30	FRS	13 S-512	Are there more than one Typical stirrup types? Are cross-ties required over a particular beam width?			
S13-31	FRS	13 S-513	Detail 3 - Is there additional horizontal reinforcement required at wall intersections and corners? General Masonry Note 20 indicates anchors, suggest a cross reference.			
S13-32	FRS	13 S-513	Detail 6 - Consider Option to provide dry-pack grout alternative to premoulded filler in case wall is constructed after upper slab. With consideration to any required firestopping detail.			
S13-33	FRS	13 S-513	Detail 6 - Instead of headed studs welded to embedded side of top connection plate, consider using threaded anchors with end nut "head" in slab and holes in top plate to pass rods down through bolted hole connection in L125x75 (ea side) to eliminate these field welds.			
S13-34	FRS	13 S-521	Detail 1 - correct spelling "slopped".			
S13-35	FRS	13 S-521	Consider showing bolted connections instead of field weld or suggest providing a note that indicates "Field bolted connections may be used in lieu of field welded connections."			
S13-36	FRS	13 S-521	Detail 3 - move conc wall callout to clear other notes.			
A13-101	FRS	13 A-101	Show room # for wash bay. Call out bollards. Should Wash bay have bollards both ends outside?			
E13-1	FRS	13 E-501	Fill in data for Lighting Fixture Schedule.			

WO-A-0033

# Structural Review Comments - Schematic Design Submittal

Ministry of Public Health - Headquarters Campus

Kabul, Afghanistan

URS PROJECT NO: 31943406

Submittal Date: 10-Mar-10

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Reviewed By:



Comment No.	Reviewer	Dwg Reference	Comment	Response Code	Response	Back-Check
<b>STRUCTURAL COMMENTS - COVERED BUS SHELTER - BUILDING NO. 18</b>						
S18-1	FRS	18 S-001 Abbreviations	AISC "Construction" not "Contractors"			
S18-2	FRS	18 S-001 General Notes	Consider indicating the year/or edition of ACI, AISC, AWS to clarify the indicated referenced design criteria.			
S18-3	FRS	18 S-001 Design Loads	Wind load basic wind speed of 40 m/s indicated; UFC 3 301 01 (27Jan2010) lists 125 km/h (=34.7 m/s). What is source of 40 m/s value?			
S18-4	FRS	18 S-001 Design Loads	Seismic coefficients indicated as Ss=1.13g; S1=0.53g; Sds=0.78g & Sd1=0.53g - What was your source for Ss/S1? Compared to UFC 3-310-01 (27Jan2010) lists Ss=1.28g & S1=0.51g - (results in Sds=0.83 & Sd1=0.51) is comparable to your calculated values.			
S18-5	FRS	18 S-001 Design Loads	Sloping Steel Roof Structure - Steel System not Specifically detailed for Seismic Resistance, Not Permitted for SDC D withn ASCE 7-05. Would it be appropriate to assign Composite steel and concrete moment frames (R=6, etc.) for the shelter columns and canopy?			
S18-6	FRS	18 S-001 Foundations	Suggest including note to indicate "Do not place foundation concrete when water is present in excavation."			
S18-7	FRS	18 S-002 CIP Concrete	Why not specify f'c = 27.5 Mpa (4000psi)? Easily acheivable and has potential to reduce dead load and overall cost.			
S18-8	FRS	18 S-002 CIP Concrete	Suggest stating Average air entrainment of 5% recommended by ACI for freeze thaw resistance in moderate exposures - This seems appropriate for Kabul.			
S18-9	FRS	18 S-002 CIP Concrete	Per ACI 211.1-91 - w/c of 0.48 would be in line with a 27.5MPa (4000psi) air entrained mix using 19mm coarse aggregate producing about 75 to 100mm slump.			
S18-10	FRS	18 S-002 CIP Concrete	Indicate that potable water shall be used as concrete mix water to reduce the amount of undesirable components (chlorides, etc.).			
S18-11	FRS	18 S-002 CIP Concrete	Note 17 - include at last sentence ", except at expansion joints."			
S18-12	FRS	18 S-002 CIP Concrete	Note 20 - "Provide"			

WO-A-0033

# Structural Review Comments - Schematic Design Submittal

Ministry of Public Health - Headquarters Campus

Kabul, Afganistan

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Comment No.	Reviewer	Dwg Reference	Comment	Response Code	Response	Back-Check
<b>STRUCTURAL COMMENTS - COVERED BUS SHELTER - BUILDING NO. 18</b>						
S18-13	FRS	18 S-002 CIP Concrete	Table #2 - Say minimum clearances no less than 25mm to accommodate placement of conc mix with 20mm coarse aggregate. Per ACI 318M-05 7.5.2.1 allows (-)10mm clear cover for slabs < 200mm thick and (-)13mm clear cover for >200mm thick. This reviewer would feel more comfortable with minimum clear cover of at least 25mm, even better with 40mm.			
S18-14	FRS	18 S-002 CIP Concrete	Table #2 - cast against earth should be "75mm"			
S18-15	FRS	18 S-002 CIP Concrete	Table #2 - suggest including "Pipes & Other Embedments....50mm"			
S18-16	FRS	18 S-002 Corr Metal Deck	Include Note 3 - Deck Fastening Requirements.			
S18-17	FRS	18 S-101	Note 1 - suggest FF datum El 10.000 to eliminate "negative" subgrade elevations that may be confusing to field, especially if working on small format drawings.			
S18-18	FRS	18 S-101	Show any slab recess areas with section mark reference to Detail 4 S-501. Show thickened slab locations and reference with section 5 to S-501. Is a particular typical detail required for break in SOG slope when for slopes down to trench drains?			
S18-19	FRS	18 S-101	Show slab joint locations by type or a note that Final Design Engineer provide joint locations.			
S18-20	FRS	18 S-101	Indicate slab-on-grade bars connecting into structural slab - assumed this is a design condition (as mentioned in DA) for the complete or partially complete basic structure as required.			
S18-21	FRS	18 S-102	Note 1 - add 10.0m to elevation per comment S17 above.			
S18-22	FRS	18 S-501	Detail 2 - revise callout to "Formed or tooled joint"			
S18-23	FRS	18 S-501	Detail 3 - Why cut any reinforcement if T/4 valley initiates weak plane shrink crack and rebar keeps the joint tight? - Also rebar is to be set lower than T/4 at T/3.			

WO-A-0033

Structural Review Comments - Schematic Design Submittal

Ministry of Public Health - Headquarters Campus  
Kabul, Afghanistan

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URS PROJECT NO: 31943406

Comment No.	Reviewer	Dwg Reference	Comment	Response Code	Response	Back-Check
<b>STRUCTURAL COMMENTS - MULTI PURPOSE BUILDING - BUILDING NO. 19</b>						
S19-1	FRS	19 S-001 Abbreviations	AISC "Construction" not "Contractors"			
S19-2	FRS	19 S-001 General Notes	Consider indicating the year/or edition of ACI, AISC, AWS to clarify the indicated referenced design criteria.			
S19-3	FRS	19 S-001 Design Loads	Wind load basic wind speed of 40 m/s indicated; UFC 3 301 01 (27Jan2010) lists 125 km/h (=34.7 m/s). What is source of 40 m/s value?			
S19-4	FRS	19 S-001 Design Loads	Seismic coefficients indicated as Ss=1.13g; S1=0.53g; Sds=0.78g & Sd1=0.53g - What was your source for Ss/S1? Compared to UFC 3-310-01 (27Jan2010) lists Ss=1.28g & S1=0.51g - (results in Sds=0.83 & Sd1=0.51) is comparable to your calculated values.			
S19-5	FRS	19 S-001 Design Loads	Sloping Steel Roof Structure - Steel System not Specifically detailed for Seismic Resistance, Not Permitted for SDC D within ASCE 7-05. Would it be appropriate to assign Special steel concentrically braced frames (R=6, etc.) for the truss roof?			
S19-6	FRS	19 S-001 Foundations	Suggest including note to indicate "Do not place foundation concrete when water is present in excavation."			
S19-7	FRS	19 S-002 CIP Concrete	Why not specify f'c = 27.5 Mpa (4000psi)? Easily achievable and has potential to reduce dead load and overall cost.			
S19-8	FRS	19 S-002 CIP Concrete	Suggest stating Average air entrainment of 5% recommended by ACI for freeze thaw resistance in moderate exposures - This seems appropriate for Kabul.			
S19-9	FRS	19 S-002 CIP Concrete	Per ACI 211.1-91 - w/c of 0.48 would be in line with a 27.5MPa (4000psi) air entrained mix using 19mm coarse aggregate producing about 75 to 100mm slump.			
S19-10	FRS	19 S-002 CIP Concrete	Indicate that potable water shall be used as concrete mix water to reduce the amount of undesirable components (chlorides, etc.).			
S19-11	FRS	19 S-002 CIP Concrete	Note 17 - include at last sentence ", except at expansion joints."			
S19-12	FRS	19 S-002 CIP Concrete	Note 20 - "Provide"			
S19-13	FRS	19 S-002 CIP Concrete	Table #2 - Eliminate concrete cover For Walls, Beams Elevated Slabs. Include concrete cover for column main reinforcement no less than 40mm.			
S19-14	FRS	19 S-002 CIP Concrete	Table #2 - cast against earth should be "75mm"			

WO-A-0033

Structural Review Comments - Schematic Design Submittal

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Comment No.	Reviewer	Dwg Reference	Comment	Response Code	Response	Back-Check
<b>STRUCTURAL COMMENTS - MULTI PURPOSE BUILDING - BUILDING NO. 19</b>						
S19-15	FRS	19 S-002 Corr Metal Deck	Include Note 3 - Deck Fastening Requirements.			
S19-16	FRS	19 S-101	Note 1 - suggest FF datum El 10.000 to eliminate "negative" subgrade elevations that may be confusing to field, especially if working on small format drawings.			
S19-17	FRS	19 S-101	Show any slab recess areas with section mark reference to Detail 4 S-501.			
S19-18	FRS	19 S-101	Show slab joint locations by type or a note that Final Design Engineer provide joint locations.			
S19-19	FRS	19 S-101	Indicate slab-on-grade bars connecting into structural slab - assumed this is a design condition (as mentioned in DA) for the complete or partially complete basic structure as required.			
S19-20	FRS	19 S-102	Note 1 - add 10.0m to elevation per comment S16 above.			
S19-21	FRS	19 S-501	Detail 2 - revise callout to "Formed or tooled joint"			
S19-22	FRS	19 S-501	Detail 3 - Why cut any reinforcement if T/4 valley initiates weak plane shrink crack and rebar keeps the joint tight? - Also rebar is to be set lower than T/4 at T/3.			
S19-23	FRS	19 S-501	Detail 4 - Why does diamond infill at column need to be deeper than slab?			
			Detail 4 Note 3 - Correct bar lap reference to S-002.			
S19-24	FRS	19 S-501	Should there be a detail for a concrete curb into the slab on grade to show intent to separate vehicle travelled way from pedestrian way?			
S19-25	FRS	19 S-521	Detail 3 - move conc wall callout to clear other notes.			

WO-A-0033

Structural Review Comments - Schematic Design Submittal

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Kabul, Afghanistan

URS PROJECT NO: 31943406

Submittal Date: 10-Mar-10

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Comment No.	Reviewer	Dwg Reference	Comment	Response Code	Response	Back-Check
<b>STRUCTURAL COMMENTS - GUARD TOWERS - BUILDING NO. 20</b>						
S20-1	FRS	20 S-001 Abbreviations	AISC "Construction" not "Contractors"			
S20-2	FRS	20 S-001 General Notes	Consider indicating the year/or edition of ACI, AISC, AWS to clarify the indicated referenced design criteria.			
S20-3	FRS	20 S-001 Design Loads	Wind load basic wind speed of 40 m/s indicated; UFC 3 301 01 (27Jan2010) lists 125 km/h (=34.7 m/s). What is source of 40 m/s value?			
S20-4	FRS	20 S-001 Design Loads	Seismic coefficients indicated as $S_s=1.13g$ ; $S_1=0.53g$ ; $S_d=0.78g$ & $S_d1=0.53g$ - What was your source for $S_s/S_1$ ? Compared to UFC 3-310-01 (27Jan2010) lists $S_s=1.28g$ & $S_1=0.51g$ - (results in $S_d=0.83$ & $S_d1=0.51$ ) is comparable to your calculated values.			
S20-5	FRS	20 S-001 Design Loads	Seismic Loads - "Special reinforced masonry shear walls" indicated. "Ordinary Steel Concentrically Braced Frame" seems more appropriate ( $R=3.25$ , etc.)			
S20-6	FRS	20 S-001 Foundations	Suggest including note to indicate "Do not place foundation concrete when water is present in excavation."			
S20-7	FRS	20 S-001 CIP Concrete	Why not specify $f'_c = 27.5$ Mpa (4000psi)? Easily achievable and has potential to reduce dead load and overall cost.			
S20-8	FRS	20 S-001 CIP Concrete	Suggest stating Average air entrainment of 5% recommended by ACI for freeze thaw resistance in moderate exposures - This seems appropriate for Kabul.			
S20-9	FRS	20 S-001 CIP Concrete	Per ACI 211.1-91 - w/c of 0.48 would be in line with a 27.5MPa (4000psi) air entrained mix using 19mm coarse aggregate producing about 75 to 100mm slump.			
S20-10	FRS	20 S-001 CIP Concrete	Indicate that potable water shall be used as concrete mix water to reduce the amount of undesirable components (chlorides, etc.).			
S20-11	FRS	20 S-001 CIP Concrete	Note 20 - "Provide"			
S20-12	FRS	20 S-001 CIP Concrete	Table #2 - Should Title read "Minimum Tension Lap Splice..."?			
S20-13	FRS	20 S-001 CIP Concrete	Table #2 - Remove interior face wall clearance. Remove SOG bottom clearance. All Cast against earth = 75mm.			
S20-14	FRS	20 S-101	Detail 1 - Note 1; - suggest FF datum El 10.000 to eliminate "negative" subgrade elevations that may be confusing to field, especially if working on small format drawings.			
S20-15	FRS	20 S-101	Detail 1 - Note 7; add to last sentence ".." and depth" to account for possibility that deeper anchor bolts will be supplied - may be too deep for 150mm slab.			
S20-16	FRS	20 S-101	Detail 2 - It may be desirable to place top of SOG about 50mm above finish grade.			

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Comment No.	Reviewer	Dwg Reference	Comment	Response Code	Response	Back-Check
STRUCTURAL COMMENTS - GUARD TOWERS - BUILDING NO. 20						
S20-17	FRS	20 S-101	Detail 2 - If stem wall width is req'd to be 300mm, two layers of rebar EW EF would give better capacity/crack control.			
S20-18	FRS	20 S-101	Detail 2 - Transverse reinf in strip footing could be straight bars.			
S20-19	FRS	20 S-101	Detail 2 - The 150mm slab does not need end hook on rebar. Show rebar near mid-slab. Pinned connection between stem wall and SOG might use "U" shaped vertical bars.			
A20-1	FRS	20 A-101	If SOG exposed to environment, the vapor barrier and cap break could be eliminated, instead call out compacted granular subbase.			